

REMARKS

Claims 1-19 were currently pending. Claims 1-19 were rejected. Claims 1, 2, 4, 5, 11, 14, 15, 17, and 18 have been cancelled. Claims 3, 6-10, 12-13, 16, and 19 have been amended. Claims 20-27 are new. Claims 3, 6-10, 12-13, 16, and 19-27 are currently pending.

Amendments to the Claims

Claim 3 has been amended to clarify the scope of the invention, in response to the examiner's comments on page 4 of the Office Action dated June 5, 2007. The final 2 clauses have been replaced by 5 clauses that the applicant believes is a clearer representation of the claimed subject matter. No new matter has been added.

Claims 12 and 16 have been amended in much the same manner as claim 3. Claims 6-10, 13, and 19 have been amended in line with the amendments to the claims upon which they are dependent. No new matter has been added.

Claim Rejections - 35 USC § 102

The examiner has rejected claims 1-7, 9, 11, 12, and 14-19 under 35 USC § 102(b) as being anticipated by U.S. Patent No. 4,910,599 issued to Seiji HASHIMOTO (hereinafter Hashimoto).

Claims 1, 2, 4, 5, 11, 14, 15, 17, and 18 have been cancelled. The examiner remarked that the terms "highest", "next highest", and "lowest" as used in claim 3 did not clearly state which of the clock pulses has the highest, next highest and lowest frequencies. As discussed above, the applicant has amended claim 3 to recite that the first frequency is higher than the second frequency and the second frequency is higher than the third frequency. Thus, addressing the examiner's remarks relative to the clarity of claim 3.

Hashimoto discloses an imaging system with high and low speed readout (Hashimoto, Title). A portion B of the image formed on the imaging device is displayed at a greater scale (Hashimoto, column 3, line 67 to column 4, line 1). Signals corresponding to unnecessary portions including the optically black portion are shifted at a high speed (Hashimoto, column 4, lines 5-8). The shifting of some of the unnecessary portion takes place at a frequency $2f_s$ (Hashimoto, column 8, lines 41-48). The shifting of one of the optically black portions takes place at a frequency f_s (Hashimoto, column 8, lines 61-65). The zoomed in portion B is shifted at a frequency $f_s/2$ (Hashimoto, column 9, lines 11-20). The optically black portion

is shifted at a lower frequency than the unnecessary portion so that the optically black portion may be read accurately, such that the optically black level may be set accurately (Hashimoto, column 9, lines 30-33). The signals corresponding to the optical black portion are used to correct the dark current level (Hashimoto, column 13, lines 8-12).

The applicant respectfully disagrees with the examiner's interpretation of Hashimoto. Hashimoto discloses several embodiments. In all of these embodiments, the optically black portions and the other unnecessary portions are shifted at a frequency higher than the zoomed in portion B. In some embodiments the optically black portion is shifted a frequency f_s while the other unnecessary portions are shifted at a higher frequency of two to three times f_s . In other embodiments, the frequency at which the optically black portion is shifted relative to the unnecessary portions is not stated.

The examiner has equated Hashimoto's optically black portion to the applicant's dummy pixels, Hashimoto's unnecessary portion to the applicant's non-reading pixels and Hashimoto's effective portion to the applicant's reading pixels. Claim 3 recites that the dummy pixels are shifted at a first frequency, which is higher than the second frequency at which the non-reading pixels are shifted. Hashimoto teaches that the optically black pixels are shifted at a lower frequency than the unnecessary pixels. As such, Hashimoto teaches away from the applicant's invention as recited in claim 3. Thus, claim 3 is patentably distinguishable from the prior art as disclosed in Hashimoto.

Claims 12 and 16 are allowable for substantially the same reason as claim 3. Claims 6-7, 9, 13, and 19 are allowable at least because they are dependent upon an allowable base claim.

Claim Rejections - 35 USC § 103

Claim 8 was rejected under 35 USC § 103(a) over Hashimoto and U.S. Patent No. 6,100,928 issued to Daisuke HATA (hereinafter Hata). Claim 10 was rejected under 35 USC § 103 over Hashimoto and U.S. Patent No. 5,191,426 issued to Nobuo KOCHI (hereinafter Kochi). Claim 13 was rejected under 35 USC § 103 over Hashimoto and U.S. Patent No. 5,684,609 issued to Marin POTUCEK et al. (hereinafter Potucek).

Claims 8, 10, and 13 are allowable at least because they are dependent upon an allowable base claim.

New Claims

Claims 20-27 are new. Support for the technical features recited in claims 20 and 21 may be found at least in claim 12 as it was originally submitted. Claim 22 is substantially similar to claim 3 except that the particular type of pixel is not identified (i.e., dummy, non-reading, and reading). Instead, the pixels recited in claim 22 are identified in a generic sense (i.e., first, second, and third). Claim 23 identifies these generic pixels in substantially the same manner as they are identified in claim 3. No new matter has been added.

Claim 24 is substantially similar to claim 3 as currently amended, reciting an additional limitation wherein the plurality of pixels are arranged in one line. Support for this limitation may be found at least in FIGS. 2B, 12, and on page 10, lines 14-18 of the applicants' specification.

Claims 25-26 are substantially similar to claim 3 as currently amended, reciting an additional limitation wherein the relative time periods for which signals are transferred is specifically recited. Support for these limitations may be found at least in FIGS. 4A-B of the applicants' specification.

Claim 27 is substantially similar to claim 3 as currently amended, reciting an additional limitation reciting the timing of the data signal relative to the level shifts of the shift signal. Support for these limitations may be found at least in claim 3 and FIGS. 4A-B.

Claims 20-27 are allowable for substantially the same reason as claim 3.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration of the present application.

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